Note to readers with disabilities: *EHP* strives to ensure that all journal content is accessible to all readers. However, some figures and Supplemental Material published in *EHP* articles may not conform to 508 standards due to the complexity of the information being presented. If you need assistance accessing journal content, please contact ehp508@niehs.nih.gov. Our staff will work with you to assess and meet your accessibility needs within 3 working days.

Supplemental Material

Airborne Fine Particles and Risk of Hospital Admissions for Understudied Populations: Effects by Urbanicity and Short-Term Cumulative Exposures in 708 U.S. Counties

Mercedes A. Bravo, Keita Ebisu, Francesca Dominici, Yun Wang, Roger D. Peng, and Michelle L. Bell

Table of Contents

- **Table S1.** Characteristics of PM_{2.5} pollution data.
- **Table S2.** Summary statistics of model evaluation for 24-h average PM_{2.5} county level exposure estimates
- **Figure S1.** Availability of monitor data by county for the study area output (data from 2000 U.S. Census; map created using ArcGIS).
- **Figure S2.** County-specific correlation between exposure estimates derived from observed data and CMAQds simulated PM_{2.5} concentrations for the 418 counties with monitoring data and populations \geq 50,000, 2002-2006 (data from 2000 U.S. Census; map created using ArcGIS). This map shows correlations between county level monitor-derived daily exposure estimates for daily county level CMAQds-derived exposure estimates. Only counties with monitoring data and populations \geq 50,000 are included in the comparison

Figure S3. Comparison of county-specific maximum likelihood health effect estimates obtained from monitor-derived exposure estimates (x-axis) versus CMAQds_subset-derived exposure estimates ($\hat{\beta}^c$ coefficients relating PM_{2.5} concentration to hospitalization rates in county-specific regression model): (a) cardiovascular; (b) respiratory (n=418 counties) Point size is inversely proportional to the magnitude of the standard error associated with each monitor-derived county-specific maximum likelihood health effect estimate, such that a smaller point size indicates greater uncertainty associated with that county-specific estimate. Note that these values represent coefficients that have not been scaled.

Figure S4. Percent increase in hospital admissions associated with a $10\mu g/m^3$ increase in PM_{2.5} concentration, estimated using monitoring data (gray) and downscaler output (black), only for counties with monitoring data (CMAQds_subset), by level of urbanicity (lag 0) Vertical lines represent 95% posterior intervals. Urbanicity is measured as percent of county population residing in nonurban areas